

**NOTE**

**Antibacterial Activity of Volatile Components  
From *Citrus reticulata***

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The volatile components from *Citrus reticulata* leaves were tested and found to have adequate antibacterial activity against the tested organism in comparing to the standard drugs. Various essential oils have been reported to be associated with antibacterial activity. Therefore present investigations were carried out with a view to examine the antibacterial activity of the oil from the leaves of *Citrus reticulata*.

**Key Words:** Antibacterial activity, Volatile components, *Citrus reticulata*.

*Citrus reticulata* belongs to natural order Rutaceae and is cultivated in several parts of India. The Ayurvedic system of medicine describes its fruits as laxative, cardiotoxic and anthelmintic<sup>1-5</sup>.

Filter paper disc method of Maruzzella *et al.*<sup>6</sup> and Henry's was taken recourse to for determining the antibacterial activity of the volatile oil. The medium used for cultivating the bacteria (10<sup>6</sup> bacterium 1 mL before inoculation) was nutrient agar. Discs of 8 mm diameter of Whatmann No. 1 filter paper were thoroughly moistened in the oil amount was drained and placed on the seeded agar plates. Each plate carried four samples bearing crosswise along the margin and one at the centre as control for comparison of inhibitory zones. The plates were inoculated for 24 h at 36±1°C.

The zones of inhibition were measured and are tabulated in Table-1 as an average of maximum readings of zone of inhibition in four dimensions. The activity was compared with streptomycin/lacromycin against 300 ppm negative/positive bacteria.

A critical review and deep sweep in the zones of inhibition values (Table-1) has concluded that the essential oil possessed adequate antibacterial activity against all the organism. The maximum inhibition activity was observed *Salmonella typhi* 25 mm and lowest was in *Sarcina lutea* causing 11 mm zone of inhibition. The test oil was not found to possess more bacteriotoxicity when compared with the control *i.e.*, 300 ppm acromycin/streptomycin against gram

(+)/gram (-) bacteria except *S. typhi* which causes more bacterotoxicity than control, and therefore has enough scope for its application as antimicrobial agents.

TABLE-1  
ANTIBACTERIAL ACTIVITY OF THE ESSENTIAL OIL

No.	Organism	Antibacterial on inhibition oil	Activity zone (mm) control
1.	<i>Bacillus anthraus</i> (+)	8	19
2.	<i>Staphylococcus albus</i> (+)	7	23
3.	<i>Clostridium welchi</i> (+)	15	18
4.	<i>Vibrio cholerae</i> (-)	16	20
5.	<i>Sarcina lutea</i> (+)	11	15
6.	<i>Salmonella typhii</i> (+)	25	23
7.	<i>Pseudomonas aeruginosa</i> (-)	16	22

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